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# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.

First Inventor or Application Identifier Karl V.L. Barnett

Title Weather Shield and Solar Heat  
Collector Per Reflector

Express Mail Label No.

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

1. ☒ \* Fee Transmittal Form (e.g., PTO/SB/17)  
(Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 18]  
(preferred arrangement set forth below)
  - Descriptive title of the invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to Microfiche Appendix
  - Background of the invention
  - Brief Summary of the invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 5]
4. Oath or Declaration [Total Pages 2]
  - a. ☒ Newly executed (original or copy)
  - b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))  
(for continuation/divisional with Box 16 completed)
    - i. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting  
inventor(s) named in the prior application,  
see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

\* NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY  
FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT  
IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28)

ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

5. ☐ Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)
  - a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement ☐ Power of  
(when there is an assignee) ☐ Attorney
9. ☐ English Translation Document (if applicable)
10. ☐ Information Disclosure ☐ Copies of IDS  
Statement (IDS)/PTO-1449 ☐ Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
13. ☒ \* Small Entity ☐ Statement filed in prior application,  
Statement(s) ☐ Status still proper and desired  
(PTO/SB/09-12)
14. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)
15. ☐ Other: \_\_\_\_\_

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: \_\_\_\_\_

Prior application information: Examiner \_\_\_\_\_ Group / Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label

(Insert Customer No. or Attach bar code label here)

or ☒ Correspondence address below

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Signature Karl Vernon Lee Barnett

Date 02-24-99

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

**STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) & 1.27(b))—INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant, Patentee, or Identifier: Karl Vernon Lee Barnett

Application or Patent No.: \_\_\_\_\_

Filed or Issued: \_\_\_\_\_

Title: Weather Shield and Solar Heat Collector per Reflector

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.  
☐ the application identified above.  
☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.  
☐ Each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

Karl V.L. Barnett  
NAME OF INVENTOR

Not-Applicable  
NAME OF INVENTOR

Not-Applicable  
NAME OF INVENTOR

Karl Vernon Lee Barnett  
Signature of inventor

N/A  
Signature of inventor

N/A  
Signature of inventor

02-24-99  
Date

N/A  
Date

N/A  
Date

TITLE OF INVENTION

The inventor, is Karl Vernon Lee Barnett, a natural born citizen of the United States, residing at Apt. 11-K, Ascension Drive in Asheville, North Carolina, 28806, 828-255-8314.

He is the sole inventor of the weather shield and solar heat collector per reflector, a cover of rigid material of sufficient size and shape as to accommodate the complete surrounding of the exterior unit, of a heat pump or air conditioning system unit, which will shelter the said exterior unit from the weather conditions of rain, snow, sleet, hail, wind, cold, and the heat, by acting as an umbrella to divert said weather conditions, a shield to impede the movement of the natural flow of air currents, which produce a wind chill effect, to act in the capacity of an energy saver, by collecting heat from solar rays thru the use of absorbant pigment coating, repelling heat from solar rays thru the use of a white reflective pigment coating, or attachable panels of a white durable material, and act by use of an air regulator in conjunction with a top cover diffussor, to seperate the flow of forced air thru the heat exchanger, of said exterior unit, there by reducing the recirculation of air thru said heat exchanger.

CROSS-REFERENCE TO RELATED APPLICATION

NOT APPLICABLE

STATEMENT REGARDING FEDERALLY  
SPONSORED RESEARCH OF DEVELOPMENT

NOT APPLICABLE

REFERENCE TO A MICROFICHE APPENDIX

NOT APPLICABLE

## BACKGROUND OF THE INVENTION

The field of endeavor, of this invention, is in the heating and air conditioning technical field, as pertains to the exterior unit of heat pumps and air conditioning systems.

The subject matter of the claimed invention is centered around the said exterior unit, the function of which is to act as the heart, veins, lungs and soul of said system, having a compressor that pumps, by means of tubing thru the air circulation system of the heat exchange coils, fed by a forced air fan.

The soul of the heating and cooling process center, is the said exterior unit heat exchange system, which is located outdoors in a harsh environment, with an unimpeded access of the weather elements of rain, snow, sleet, hail, wind, cold, and extreme heat, which drastically reduces the said heat exchange effect, by;

1) introducing moisture per water, directly into the said air circulation system, which interacts with cold unregulated winds to freeze-up the said tubing and reduces or totally stops air flow,

2) being illuminated daily by solar heat rays, which are either wasted during heat cycle season or endured as a burden to overcome during the cooling cycle season.

Where as, the use of said heat pumps and central air conditioning exterior units, have been plagued by continuous problems such as;

A) the lack of adequate weather protection,

B) the unavoidable placement, of said exterior unit, in weather conditions, which by nature are the total opposite of conditions needed for the optimal heating and cooling exchange functions of the freon conduit, employed by said exterior unit's compressor, to transfer;

A) heat from a heat starved environment of the outdoors, through piping, into the indoors,

B) heat from the indoors, into a heat rich environment, of the outdoors, through said piping,

C) said heat, through forced air flow, by use of electric motors, into an already hot summer environment,

D) said heat, pick up from a cold winter environment to be transported indoors.

Therefore, the use of the weather shield and solar heat collector per reflector, will be a solution, to said problems, by means of;

A) a cover of rigid material of sufficient size and shape to accommodate the complete surrounding of said exterior unit, which will shelter the said exterior unit from the said weather conditions of rain, snow, sleet, hail, wind, cold and heat,

B) by acting as;

1) an umbrella to divert said weather conditions,

2) a shield to impede the movement of the natural flow of air currents, which produce a wind chill effect,

3) act in the capacity of energy saver, by:

A) collecting heat from solar rays thru the use of a black absorbant pigment coating,

B) repelling heat from solar rays thru the use of a white reflective pigment coating, or attachable panels of a white durable material,

C) reducing the constant defrost cycles caused by weather related moisture freeze-ups on said exterior units coils,

D) act to control the recirculation of air flow produced by said exterior unit's fan, which circulates air through the heat exchanger.

Further, references to specific problems involved in the prior art, are as follows:

A) College level, book of study, Refrigeration and Air Conditioning Technology, 2nd Edition by Whitman, Johnson, published by Delmar;

A) Page 799, chapter 45, section 25 reads as follows;

The outdoor unit installation for a heat pump is much like a central air conditioning system from an air flow standpoint. The unit must have a good air circulation around it, and the discharge air must not be allowed to recirculate.

There are some more serious considerations that should be dealt with. The direction of the prevailing wind in the winter could lower the heat pump performance. If the unit is located in a prevailing north wind or a prevailing wind from a lake, the performance may not be up to standard. A prevailing north wind might cause evaporation to operate at a lower than normal temperature. A wind blowing inland off a lake will be very humid and might cause freezing problems in the winter.

The outdoor unit must not be located where roof water will pour into it. The outdoor unit will be operating at below freezing much of the time, and any moisture or water that is not in the air itself, should be kept away from the unit's coil. If not, excess freezing will occur.

The outdoor unit is an evaporator in winter and will attract moisture from the outside air. If the coil is operating below freezing, the moisture will freeze on the coil. If the coil is freezing, the moisture will run off the coil as it does in an air conditioning evaporator. This moisture must have a place to go. If the unit is in a yard, the moisture will soak into the ground. If the unit is on a porch or walk, the moisture could freeze and create slippery conditions, Figure 45-30.

The outdoor unit is designed with drain holes or pans in the bottom of the unit to allow free movement of water away from the coil. If they are inadequate, the coil will become a solid block of ice in cold weather. When the coil is frozen solid, it is a poor heat exchanger with the outside air, and the C.O.P. will be reduced. Defrosting methods are discussed later.

So, you can see that a problem has existed for decades, with no design or consideration given for the control of the problem. The prior art solution has been, to;

- 1) move it to an area where hopefully the wind isn't as strong,
- 2) keep the outdoor unit away from falling water by locations,
- 3) drill holes in bottom to drain the unimpeded water flow,

B) As of February 16, 1999, a patent search of the U.S.P.T.O. Gov./ web site has given the following patent data base information;

- 1) Heat Pump weather shield - 0 occurrences in 0 patents,
- 2) Heat Pump cabinet weather protection - 0 occurrences in 0 patents,
- 3) Heat Pump cabinet protectors - 0 occurrences in 0 patents,
- 4) Heat Pump and Air Condition weather shield - 0 occurrences in 0 patents.

The problem exist, but, no solution, until now.

C) Also, the U.S.P.T.O. Gov/ patent data base search results on the subject of heat pumps with solar heat is as follows;

1) heat pumps with solar heat source to Wallin, et. al. number 4,030,312 on January 21, 1977,

2) combination heat pump and low temperature solar heat collector to Ramey, number 4,005,583 on February 01, 1977,

3) several other related topic patents issued, but none similar to the invention.

D) conclusion, the novelty of the unobvious approach taken by the inventor, is to go to the core of the problems, stop the water and wind from gaining access to the sensitive heat exchange system, use the sun's solar rays to an advantage, absorb when you need heat, reflect when you need cooling.

This invention is definitely an improvement, to the prior art, as relates to the said exterior units of heat pumps and air conditioning systems!

## BRIEF SUMMARY OF THE INVENTION

The general idea of the claimed invention in a summarized form is;

A) a cover of rigid material of sufficient size and shape as to accommodate the complete surrounding of the said exterior unit, which will shelter the said exterior unit from the weather conditions of rain, snow, sleet, hail, winds, cold, and the heat, by acting as an umbrella to divert said weather conditions, a shield to impede the movement of the natural flow of air currents, which produce a wind chill effect, to act in the capacity of an energy saver by collecting heat from solar rays thru the use of absorbant pigment coatings, repelling heat from solar rays thru the use of a white reflective pigment coating, or attachable panels of a white durable material,

B) the object of the invention is to be a solution to some of the problems of the said exterior unit, there by reducing the constant defrosting cycles, which reverses the heating cycle back to removing heat from the indoors, so as to heat the frozen water on the said exterior unit, and make the heat pump and air conditioning systems more operationally and energy efficient, by adding solar heat to heat exchange air in winter or removing solar heat from said heat exchange in the summer, to act as an air regulator, to reduce the recirculation of air flow thru the said heat exchange.

Patent Office



## BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

The following, is a list of all figures, by number, with corresponding statements explaining what each figure depicts;

A) Figure 01, depicts a fully assembled weather shield and solar heat collector per reflector, with numbering of the component parts, and indicator lines drawn to said component parts,

B) Figure 02, depicts a top oversight view, of said weather shield, with numbered side panel parts, displaying a view of all sides of the invention,

C) Figure 03, depicts a type of component side panel, with tooling of air vent openings, and bolt holes, for said side panel attachment, and anchor plate brackets, on top section corners for attachment of the top cover diffuser,

D) Figure 04, depicts an exploded view of a portion of said component side panel, which is illustrated in FIG.03, that allow an enhanced view of greater detail, to show the relationship or order of assembly of various parts,

E) Figure 05, depicts an exploded view of a portion of FIG.06, being a second type component side panel, with necessary tooling of air vent openings and anchor plate brackets, for the attachment to said first type component side panel and said top cover diffuser,

F) Figure 06, depicts, a full view of said second type component side panel, showing an overall positioning of said tooling of air vent openings, and anchor plate brackets,

G) Figure 07-A, depicts a third type of component side panel, with necessary tooling of said air vent openings, anchor plate brackets, and a portal offset cut-out, with a flexible rubber seal bushing affixed to said third component, by means of drilled bolt holes and bolts,

H) Figure 07-B, depicts an exploded view of a section of FIG.07-A, being a third type component of said side panels, which displays an enhanced view of said flexible rubber seal bushing, as affixed to said portal offset cut out, also illustrated in FIG.07-A,

I) Figure 08, depicts the top cover diffuser, with necessary tooling, of bolt holes to allow a firm attachment to the top corner of assembled said side panels, by means of a base plate, with tooled bolt holes, corresponding to anchor plates tooled on said panels,

J) Figure 09-A, depicts a type of component bottom panel or leveling plate, with the necessary tooling of bolt holes of oval shape, and an angle bend of the desired angle to achieve proper alignment of said side panels into a fully assembled unit, of said weather shield,

K) Figure 09-B, depicts a second type of component bottom panel or leveling plate, with the necessary tooling of said oval shaped bolt holes, and said angle bend, with the addition of a portal offset cut out, which is used in conjunction with said flexible rubber seal bushing, as illustrated per FIG.07-A and FIG.07-B,

L) Figure 10-A, depicts a side view, of an air regulator panel, with the necessary tooling of angle bends, and drilled bolt holes, to facilitate the firm attachment of said air regulator panel, to top of said side panels, and to the top of each side exterior unit, with view of FIG.10-A, illustrating the styrofoam insulation, sandwiched between the two shell panels of the said air regulator,

M) Figure 10-B, depicts a frontal view of said air regulator panel, with necessary tooling of bolt holes and angle bends, which illustrates an enhanced detail of said air regulator panel, a typical component to be used in connection with each side panel,

N) Figure 10-C, depicts a second type view, of said air regulator panel, with said tooling to affix said air regulator panel to the top section of said side panel,

O) Figure 11-A, depicts an exposed view of the said weather shield, illustrating the said exterior unit, with said air regulator panels assembled, with the said; top diffuser, side panel part one, and panel part nine removed,

P) Figure 11-B depicts a top oversight view, of said weather shield, with numbering of said air regulator panels, illustrating the positioning, of said air regulator panels in relation to said side panels, and said exterior unit, which is completely surrounded by said weather shield,

Q) Figure 12, depicts a side view, which illustrates the dual functioning ends, of a wing nut bolt per screw, which can be fastened firmly into the corresponding said anchor plate bracket, and at opposite end by means of a wing nut, an easy access machine thread bolt.

## DETAILED DESCRIPTION OF THE INVENTION

The following, is a description of the specifications required to explain the manner and process of making and using a weather shield and solar heat collector per reflector, the invention, which acts as a cover, shield, air flow regulator, and energy saver, when installed surrounding the exterior unit of a heat pump or air conditioning system.

Since varying sizes and shapes of said exterior units exist, the manufacture of the weather shield will be varied to meet the wide range of sizes and shapes, which presently exist or will be produced. The drawings submitted are of one shape style and should not be interpreted as the shape of the weather shield, but as one of many styles of sizes and shapes. The manufacture of the said weather shield can be produced by following the basic guidelines set forth, and production techniques used to tailor sizes and shapes, such as curved panels to produce a cone shaped weather shield.

The following directions should serve as a basic guideline, to produce, the said weather shield:

A) Materials used should be of a rigid material of sufficient size and shape, to accommodate the complete surrounding of said exterior unit:

1) Side panels, part 1,2,3, and 4 should be produced, as illustrated in FIG.01,02.03, and FIG.06, with the number of side panels being dependent upon the shape required to match the said exterior unit; a pyramidal shape would require four side panels, a cone shape would use a number of said side panels, that are determined by the size required and the curvature of said panels.

2) Said side panels, should have intake air vents, per FIG.01, FIG.03, and FIG.04, with adequate opening space to allow a flow of air, to pass through the heat exchanger of said exterior unit, which meets the performance rate or standards required for said exterior unit,

3) Bolt holes should be tooled on said side panels, as illustrated in FIG.03 and FIG.04, with bolt anchor plate brackets assembled, on said side panels per FIG.05 and FIG.06,

4) a portal offset cut, should be made in one of the said side panels. to allow an opening for the wiring and piping of said exterior unit, per FIG.07-A and FIG.07-B,

5) A flexible rubber seal bushing, should be made to form an insulator, to protect said wiring and piping, per FIG.07-A and FIG.07-B,

6) a top cover diffuser, should be produced, which has a cover area, equal to the area of the opening formed by the connection of the top corners, produced by joining of, said side panels, as illustrated in FIG.02, to attach said top cover diffuser, by means of a base plate, with tooled bolt holes, per FIG.08, the size and shape, of air vent openings, being determined by the said opening space required to allow the exit flow of air, that has been forced through the said heat exchanger, by the said exterior unit, fan.

7) Screw holes should be tooled on said top cover diffuser base plate, as illustrated in FIG. 08, with corresponding anchor plate brackets installed at the top intersecting corners of said side panels,

8) the bottom panel or leveling platform, should have an oval shaped slide hole, on the upright section, per FIG.09-A and FIG.09-B, with a said portal offset cut on one of said bottom panels to allow the flexible rubber seal bushing, per FIG.07-A and FIG.07-B, to be installed in a manner that will safely encompass the said piping and wiring, .

9) the said; side panels, top cover diffuser, and bottom panels should be coated with;

A) a black absorbant pigment coating for a weather shield produced for a heat pump system,

B) a white reflective pigment coating for a weather shield produced for an air conditioning system,

10) an air flow regulator panel produced per FIG.10-A, FIG.10-B, and FIG.10-C with a length sufficient, to be affixed at one end, to the top section of each of said side panels, by means of screw bolts and extend to the top of said exterior unit, to be affixed by said screw bolts, per FIG.11-A,

11) a wing nut bolt per screw, easy access bolt, should be produced as illustrated in FIG.12

12) a plurality of white side panels, sufficient to completely surround a pre-installed weather shield of a heat pump, only, should, by means of a rigid material, such as, but not limited to plastic, be produced as part 16, per FIG.13-A; part 17, per FIG.13-B; part 18, per FIG.13-C; and part 19, per FIG.13-B, with tooling in exact design, size, and shape as part 1,2,3, and 4 of FIG.01., said white side panels, to be attachable per removable, dependent upon the cooling and heating mode of said exterior unit, of heat pump systems only!

13) said air regulator panel, should be produced with a double layer panel, per FIG.10-A, to accommodate a styrofoam insulation, sandwiched between said double layer panel,

14) said air regulator panel, should be tooled with the angle bends and, bolt holes, illustrated in FIG.10-B and FIG.10-C, with bolt holes in the bottom section, per FIG.10-B, being either spaced as to correspond to anchor plate on said exterior unit, or be of sufficient number to accommodate an adequate attachment to said exterior unit.

The following, is a step by step list of instructions, to be used to assemble, said weather shield,

A) step;

1) the one bottom panel, part 9, per FIG.01 and FIG.09-B, should be placed under the piping and wiring of said exterior unit, so as to fully encompass, the said piping and wiring, by means of a flexible rubber seal bushing, part 10, also, per illustration in FIG.01,

2) a side panel, part 1, per FIG.01, should be placed, so as to allow the adjoined said rubber seal bushing to fully encompass, said piping and wiring, supplied bolts should be used to firmly attach part 1, per FIG.01, FIG.07-A and FIG.07-B, to part 9, per FIG.01 and FIG.09-B,

3) an air regulator panel, part 11, per FIG.11-A and FIG.11-B, should be bolted to the top, of said panel, the appropriate end to attach being evident by size, bolt hole pattern, and angle bend of connector joint, the opposite end should be attached, by means of bolts, to said exterior unit,

4) the remaining bottom panels, parts 6,7, and 8, per FIG.01 and FIG.09-A, should be firmly attached, by means of bolts to said side panels, parts 2,3, and 4, illustrated in Figures 01,02,03,and FIG.06,

5) side panel, part 2, per FIG.01, should be placed to form a corner connection with said side panel, part 1, and be firmly attached, by means of bolts,

6) an air regulator panel, part 12, per FIG.11-B, should be bolted to the top, of said side panel, part 2, per directions to be repeated in step 3,

7) said side panel, part 3, per FIG.01, should be placed to form a corner connection with said side panel, part 2, and be firmly attached, by means of bolts,

8) an air regulator panel, part 13, FIG.11-B, should be bolted to the top section, of said side panel, part 3, per directions to be repeated in step 3,

9) said side panel, part 4, per FIG.01, should be placed to form a corner connection with said side panel, part 3, and be firmly attached, by means of bolts,

10) an air regulator panel, part 14, FIG.11-B, should be bolted to the top section, of said side panel, part 4, per direction to be repeated in step 3,

11) the remaining corner, of part 4 and part 1, per FIG.01, should be firmly attached by bolts,

12) the top cover diffuser, part 5, per FIG.01, and FIG.08, should be firmly assembled on top of the said weather shield, bolt said top cover diffuser base plate, to corresponding anchor plate brackets, located at each top corner of said side panels,

13) a wing nut bolt per screw, will be supplied by the manufacturer, part 15, per FIG.12,

The following instructions are to be used for the weather shield of a heat pump system;

A) a plurality of white side panels, by means of attachment or removal, being parts 16,17,18, and 19, FIG.13-A, 13-B, and 13-C, of sufficient number to completely cover the said weather shield, will be supplied by the manufacturer, to be installed, by means of easy access wing nut bolts, in a manner to completely surround said weather shield, with a second covering of attachable, said white side panels, for use during the cooling mode season, of said heat pump system, by;

A) removing wing nuts from installed weather shield, one panel at a time,

B) place said white side panel over a corresponding pre-installed black side panel of existing, said weather shield, by the following steps,

1) step one, a white side panel, part 16, FIG.13-A, should be placed over part 1, refer to FIG.01, by means of said wing nut bolts,

2) step two, a white side panel, part 17, FIG.13-B, should be placed over part 2, per FIG.01, by means of said bolts,

3) step three, a white side panel, part 18, FIG.13-C, should be placed over part 3, per FIG.02, by means of said bolts,

4) step four, a white side panel, part 19, FIG.13-B, should be placed over part 4, per FIG.02, by means of said bolts,

C) Firmly tighten, said wing nut bolts, to assure a secure attachment of said white side panels.



CLAIM NUMBER 1

What I claim, as my invention, is a weather shield and solar heat collector per reflector, for energy efficiency and protecting the exterior unit of central air conditioning heat pump systems comprising:

- A) a cover of rigid material, of sufficient size and shape, to accommodate the complete surrounding of said exterior unit,
- B) having means for attachment as to form a protective shell.

The weather shield and solar heat collector per reflector of claim 1, further including:

- A) a plurality of intake air vents to support an adequate air flow to reach and pass thru said exterior unit,
- B) a durable coating of black pigment, be applied to said cover for sufficient absorption of solar rays.
- C) a plurality of white panels, by means of attachment to, and with sufficient size and shape, to accommodate the complete surrounding of said cover,
- D) means for easy adjoining, of said white panels, with bolts,
- E) a portal hole of sufficient size, shape, and location on said cover, to accommodate the piping and wiring for the said exterior unit, by means of a flexible rubber bushing, insulator, to protect said piping and wiring.
- F) a plurality of air regulator panels, by means of attachment to, and with sufficient size and shape to accommodate the separation of air flow currents, by means of forced air, through said exterior unit,
- G) a plurality of air regulator panels, by means of attachment to, and with sufficient size, shape, and appropriate insulation, by means of attachment to said air regulator panels, to accommodate the complete coverage of area, by said insulation to said air regulator panels,
- H) a top cover diffuser, of adequate size and shape, to accommodate the exit flow of forced air current, having been passed through, the said exterior unit.

CLAIM NUMBER 1

The weather shield and solar heat collector per reflector of claim 1, further including:

I) a bottom panel leveling plate of rigid material, of sufficient size and shape, as to accommodate a base and leveling platform, for said protective shell, with slide bolt holes, by means of attachment,

J) a wing nut bolt per screw, with a wing nut per washer, by means of attachment, to a machine thread bolt, with hex head screw attached, in one, said wing nut bolt per screw.

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2
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A) a cover of rigid material, of sufficient size and shape, to accommodate the complete surrounding of said exterior unit,

The weather shield and solar heat reflector of claim 2, further including:

B) a durable coating of white pigment, be applied to said cover, for sufficient reflection of solar rays,

D) a plurality of air regulator panels, by means of attachment to, and with sufficient size and shape to accommodate the separation of air flow currents, by means of forced air, through said exterior unit,

F) a top cover diffuser, of adequate size and shape, to accommodate the exit flow of forced air current, having been passed through, the said exterior unit.

H) a wing nut bolt per screw, with a wing nut per washer, by means of attachment, to a machine thread bolt, with hex head screw attached, in one, said wing nut bolt per screw.

[illegible][illegible]

03261340 000099  
662060 07649260

FIGURE 1

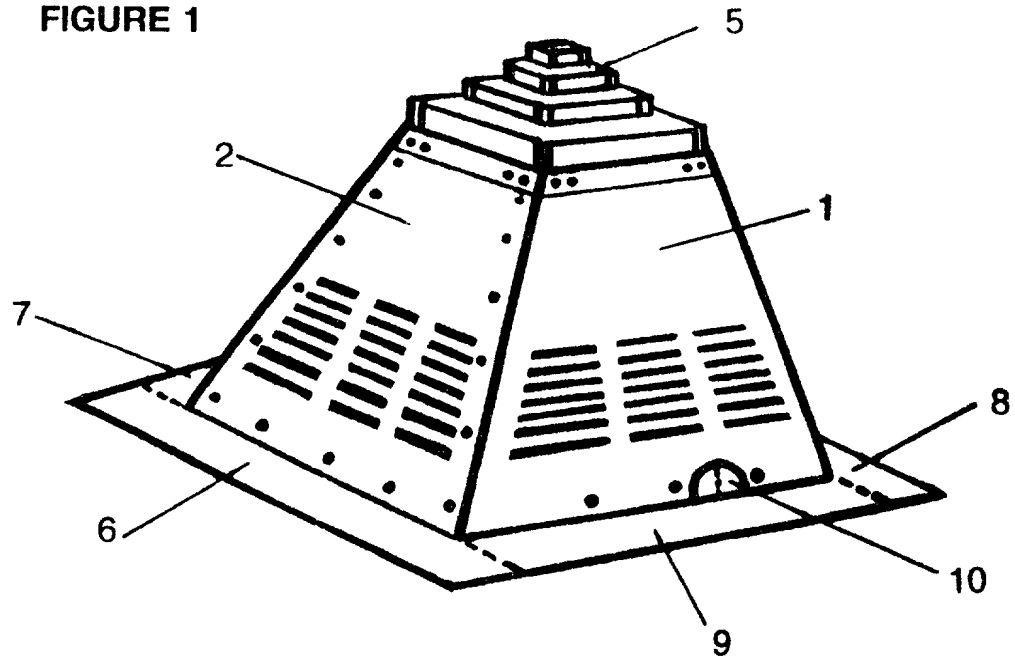


FIGURE 2

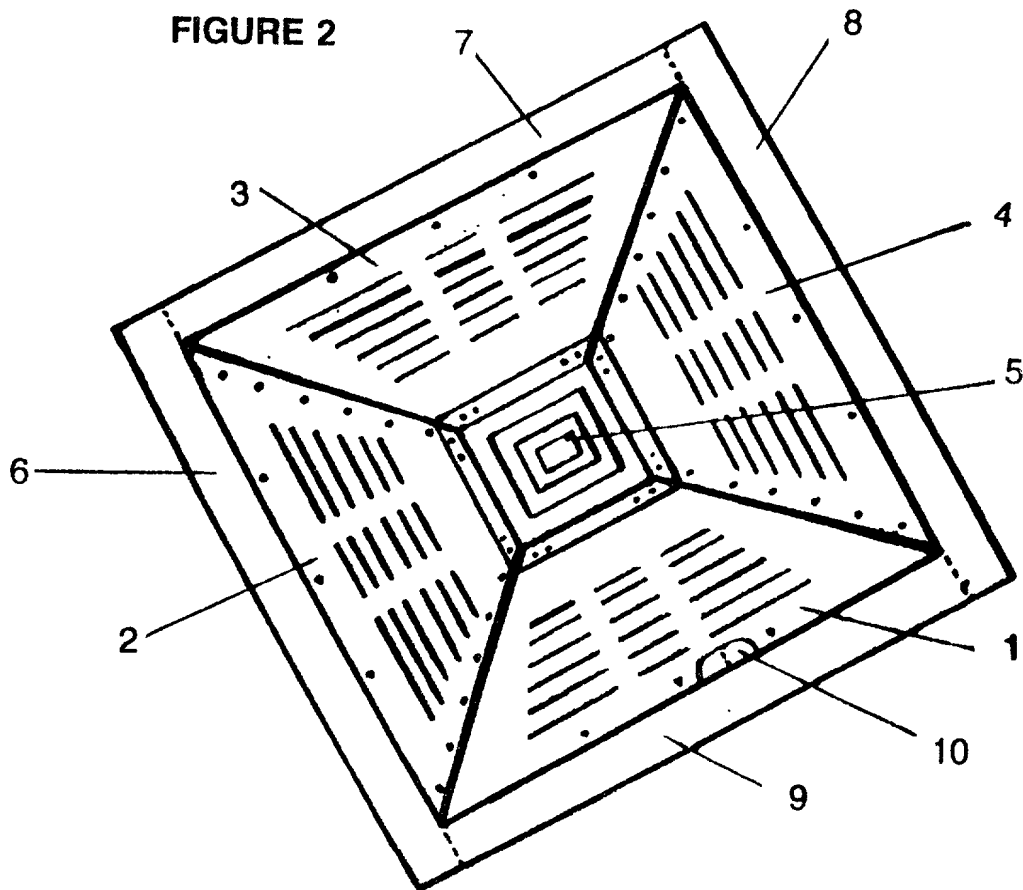


FIGURE 3

FIGURE 4

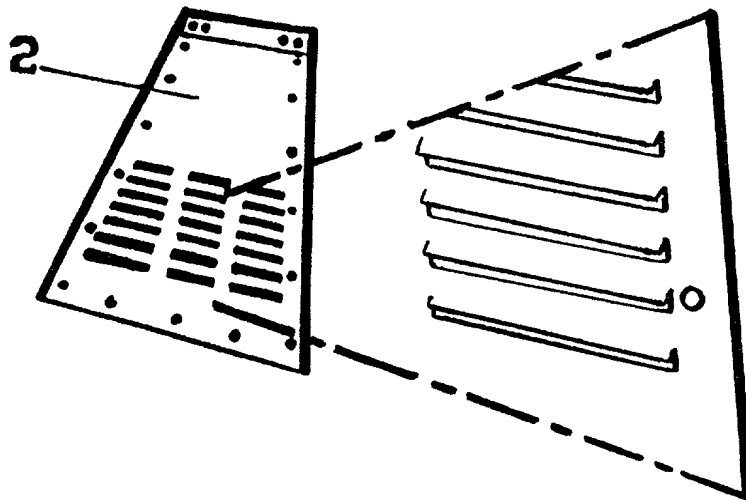


FIGURE 5

FIGURE 6

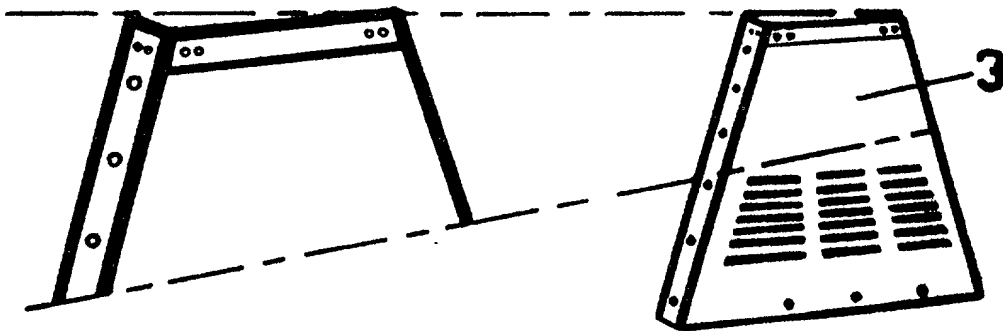


FIGURE 7 A

FIGURE 7 B

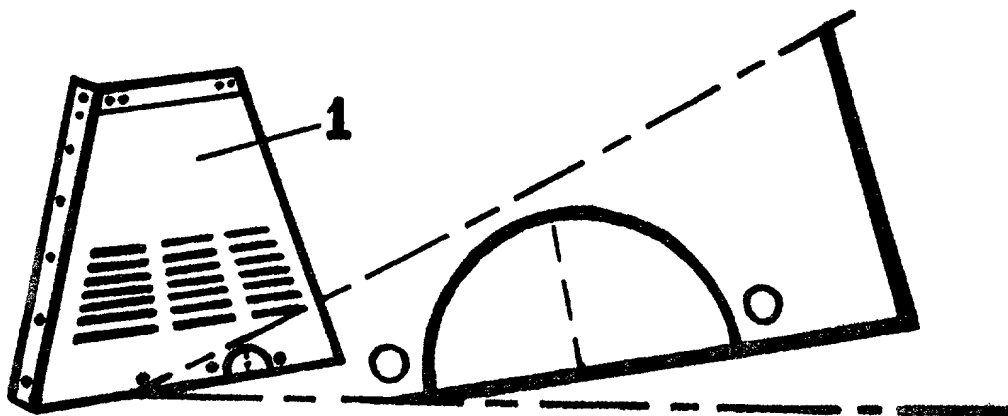


FIGURE 8

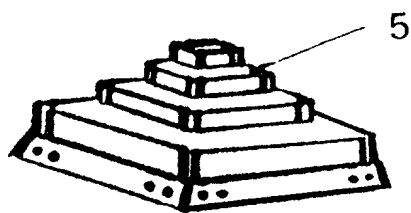


FIGURE 9 A

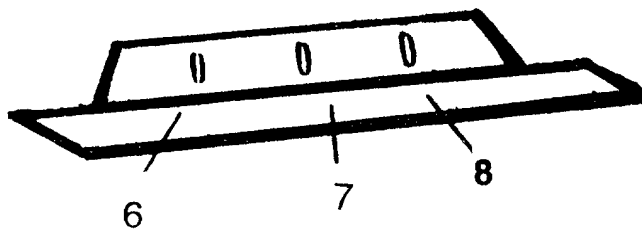


FIGURE 10A

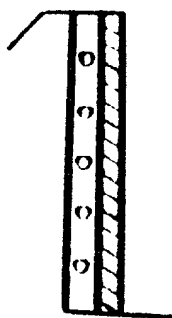


FIGURE 9 B

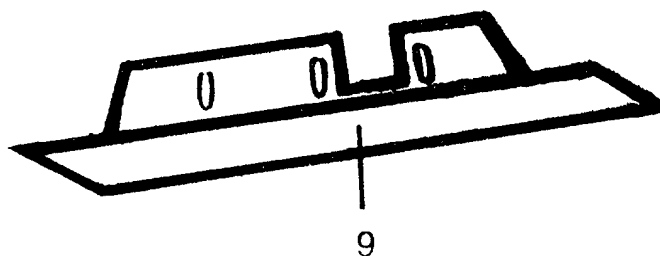


FIGURE 10B

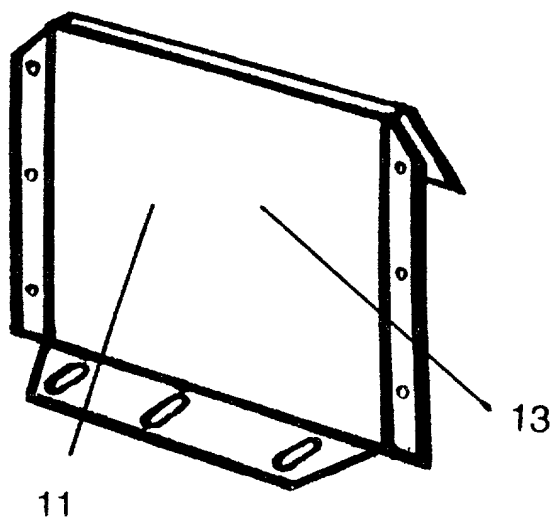


FIGURE 10 C

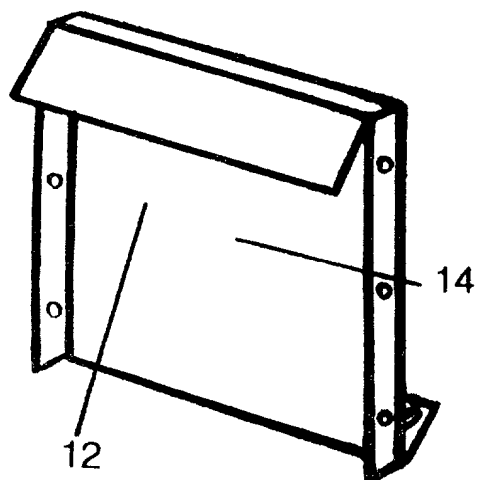


FIGURE 11 A

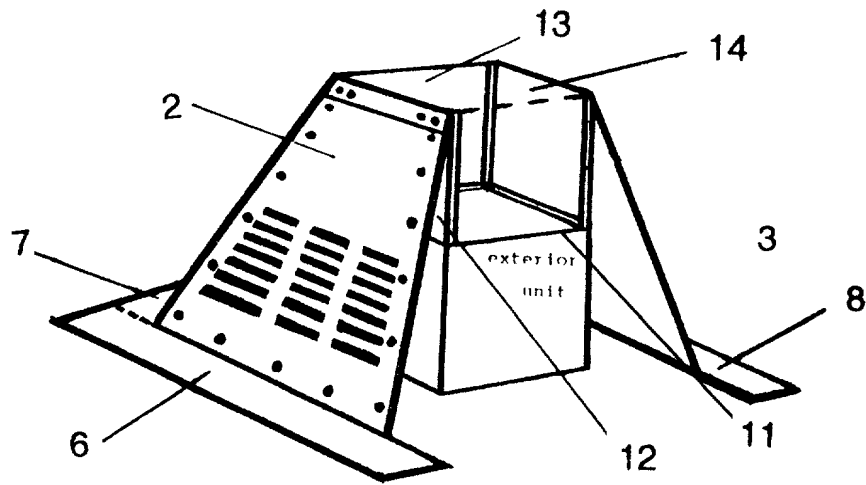


FIGURE 11 B

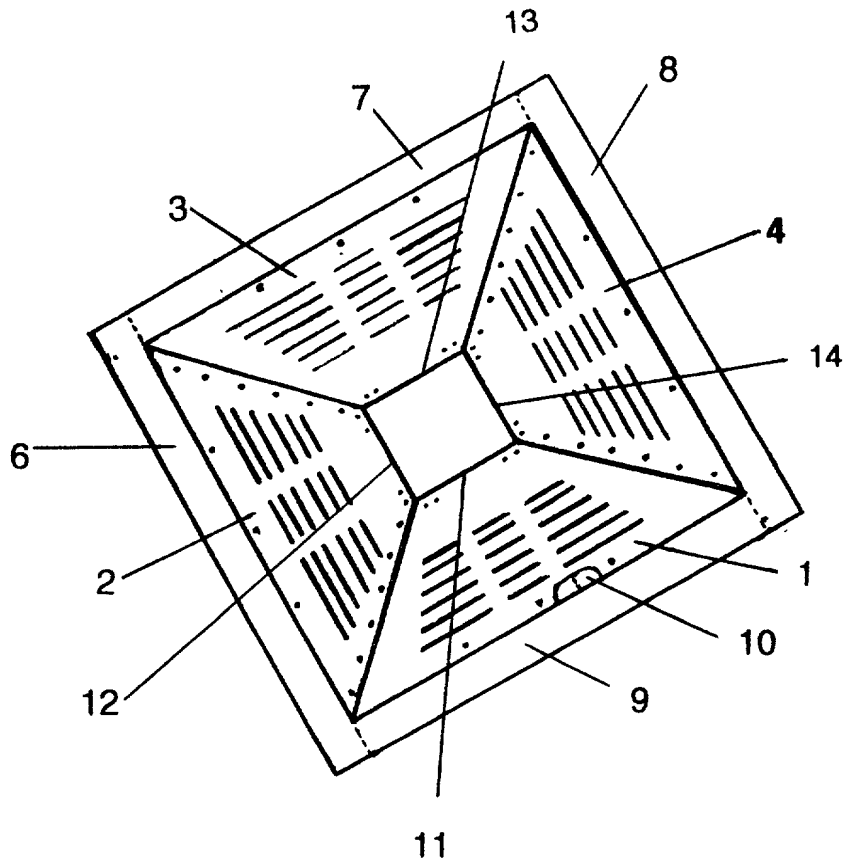




FIGURE 12

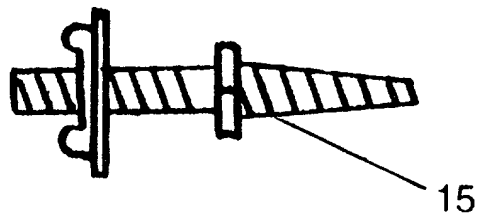


FIGURE 13 A

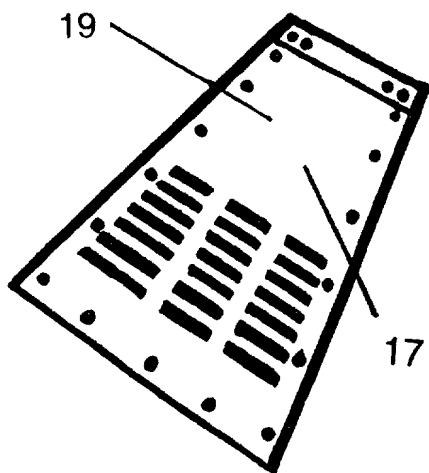


FIGURE 13 B

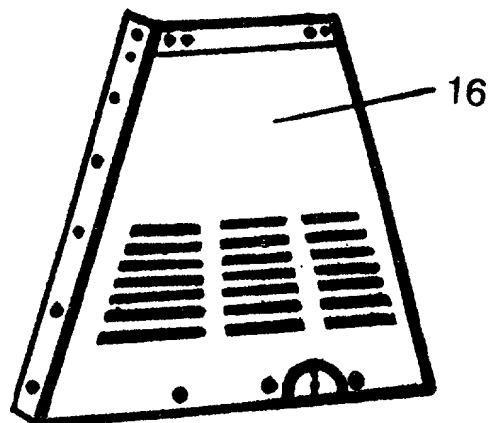
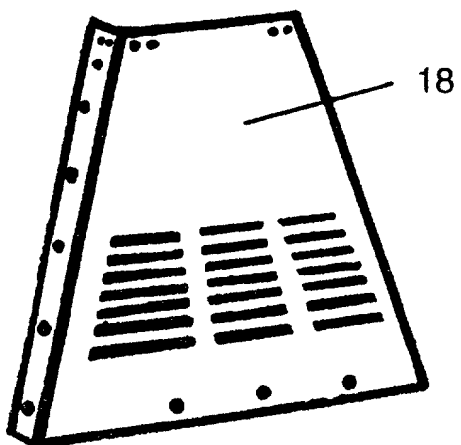


FIGURE 13 C



Please type a plus sign (+) inside this box → ☐

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Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
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**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	
First Named Inventor	Karl V.L. Barnett
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Karl V.L. Barnett, Apt.11-K Ascension Dr., Asheville, N.C., 28806, U.S. Citizen  
Weather Shield and Solar Heat Collector per Reflector

the specification of which

(Title of the Invention)

☒ is attached hereto Weather Shield&Solar Heat Collector/Reflector OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		<input type="checkbox"/> Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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## DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent  
Number

Parent Filing Date  
(MM/DD/YYYY)

Parent Patent Number  
(if applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☐ Customer Number  
or Bar Code Label

OR ☒ Correspondence address below

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State

N.C.

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Telephone

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Fax

828-253-6937

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor:

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))

Family Name or Surname

Karl Vernon Lee

Barnett

Inventor's  
Signature

Karl Vernon Lee Barnett

Date

2-24-99

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Country

U.S.A.

☐ Additional inventors are being named on the supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto